INITIAL STUDY

BACKGROUND

Project Title: Pilot Study for In-situ Reduction of Chromium and Remediation of Volatile Organic Compounds and Petroleum Hydrocarbons in Groundwater at the former Abex Corporation, Remco Hydraulics Facility, 934 South Main Street, Willits, California

Project Description: The proposed project is a pilot study designed to reduce hexavalent chromium and remediate volatile organic compounds and petroleum hydrocarbons in groundwater. The purpose of the pilot study is to assess the effectiveness of in-situ (in place) reduction treatment under the existing site conditions. The pilot test program is designed to generate data concerning the effectiveness of chromium remediation using two different reducing processes, and to provide information regarding the feasibility of a full-scale implementation of the in-situ reduction technology. In addition, a secondary evaluation of the effect of in-situ reduction technology on the observed concentrations of volatile organic compounds and petroleum hydrocarbons in the pilot test area will be performed.

The project being considered consists of two small-scale pilot studies designed to reduce chromium in groundwater. Both studies are located inside the building. The first pilot study is located at and around the former horizontal chrome plating tanks. The size of this pilot study is 90 feet by 45 feet. Thirteen points within this 90 feet by 45-foot area will be drilled and calcium polysulfide solution will be injected directly to groundwater. Following the injection of calcium polysulfide, water will be injected to disperse the calcium polysulfide. Four temporary groundwater-monitoring wells in this pilot study area will be drilled and sampled on a routine basis to evaluate the effectiveness of the pilot study.

The second pilot study is located northeast of the former horizontal chrome plating area. This pilot study area is approximately 67.5 feet by 60 feet. Twelve points within this 67.5 feet by 60-foot area will be drilled and molasses will be injected directly to groundwater. Following the injection of molasses, water will be injected to disperse the molasses. Four temporary groundwater-monitoring wells are located in the pilot study area and will be sampled on a routine basis to evaluate the effectiveness of the pilot study. Three additional temporary wells are located near the pilot study areas and will be sampled on a routine basis.

The injection of calcium polysulfide and molasses into groundwater is intended to react with the hexavalent chromium and reduce the hexavalent chromium to trivalent chromium, a less toxic form of chromium. Trivalent chromium adsorbs onto soil particles and the proponent has determined that the in-situ reduction of hexavalent chromium will not result in a significant increase of background trivalent chromium concentrations in soil.

The project proponent must comply with regulatory and permitting requirements which include California State Water Resources Control Board Resolutions 92-49 and 68-16, Title 27, Division 2, California Code of Regulations, and any other local, state and federal permitting requirements.

Proponent: Willits Environmental Remediation Trust, 5856 Granite Hills Drive, Granite Bay, California, 95746

Lead Agency: Regional Water Quality Control Board, North Coast Region, 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403

Environmental Factors	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
I. LAND USE AND PLANNING. Would the proposal:				
a) Conflict with general plan designation or zoning?	____	____	____	X
b) Conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project?	____	____	____	X
c) Be incompatible with existing land use in the vicinity?	____	____	____	X
d) Affect agricultural resources or operations (e.g. impacts to soils or farmlands, or impacts from incompatible land uses)?	____	____	____	X
e) Disrupt or divide the physical arrangement or an established community (including a low-income or minority community)?	____	____	____	X
II. POPULATION AND HOUSING. Would the proposal:				
a) Cumulatively exceed official regional or local population projections?	____	____	____	X
b) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?	____	____	____	X
c) Displace existing housing, especially affordable housing?	____	____	____	X
II. GEOLOGIC PROBLEMS. Would the proposal result in or expose people to potential impacts involving:				
a) Fault Rupture?	____	____	____	X
b) Seismic ground shaking?	____	____	____	X
c) Seismic Ground failure, including liquefaction?	____	____	____	X
d) Seiche, tsunami, or volcanic hazard?	____	____	____	X
e) Landslides or mudflows?	____	____	____	X
f) Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill?	____	____	____	X
g) Subsidence of the land?	____	____	____	X
h) Expansive soils?	____	____	____	X
i) Unique geologic or physical features?	____	____	____	X

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. WATER. Would the proposal result in:				
a) Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?				X
b) Exposure of people or property to water related hazards such as flooding?				X
c) Discharge into surface waters or other alteration of surface water quality (e.g. temperature, dissolved oxygen or turbidity)?				X
d) Changes in the amount of surface water in any water body?				X
e) Changes in currents, or the course or direction or water movements?				X
f) Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations or through substantial loss of groundwater recharge capability?			X	
g) Altered direction or rate of flow of groundwater?			X	
h) Impacts to groundwater quality?			X	
i) Substantial reduction in the amount of groundwater otherwise available for public water supplies?				X
V. AIR QUALITY. Would the proposal:				
a) Violate any air quality standard or contribute to an existing or projected air quality violation?				X
b) Expose sensitive receptors to pollutants?				X
c) Alter air movement, moisture, or temperature, or cause any change in climate?				X
d) Create objectionable odors?			X	
VI. TRANSPORTATION/CIRCULATION. Would the proposal result in:				
a) Increased vehicle trips or traffic congestion?				X
b) Hazards to safety from design features (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				X

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Inadequate emergency access or access to nearby uses?	____	____	____	X
d) Insufficient parking capacity on-site or off-site?	____	____	____	X
e) Hazards or barriers for pedestrians or bicyclists?	____	____	____	X
f) Conflicts with adopted policies supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	____	____	____	X
g) Rail, waterborne or air traffic impacts?	____	____	____	X

VII. BIOLOGICAL RESOURCES.

Would the proposal result in impacts to:

a) Endangered, threatened or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds)?	____	____	____	X
b) Locally designated species (e.g. heritage trees)?	____	____	____	X
c) Locally designated natural communities (e.g. oak forest, coastal habitat, etc.)?	____	____	____	X
d) Wetland habitat (e.g. marsh, riparian and vernal pool)?	____	____	____	X
e) Wildlife dispersal or migration corridors?	____	____	____	X

VIII. ENERGY AND MINERAL RESOURCES.

Would the proposal:

a) Conflict with adopted energy conservation plans?	____	____	____	X
b) Use non-renewable resources in a wasteful and inefficient manner?	____	____	____	X
c) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state?	____	____	____	X

IX. HAZARDS. Would the proposal involve:

a) A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation)?	____	____	____	X

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Possible interference with an emergency response plan or emergency evacuation plan?	____	____	____	X
c) The creation of any health hazard or potential health hazard?	____	____	X	
d) Exposure of people to existing sources of potential health hazards?	____	____	____	X
e) Increased fire hazard in areas with flammable brush, grass, or trees?	____	____	____	X

X. NOISE. Would the proposal result in:

a) Increases in existing noise levels?	____	____	X	
b) Exposure of people to severe noise levels?	____	____	____	X

XI. PUBLIC SERVICES. Would the proposal have an effect upon, or result in a need for new or altered government services in any of the following areas:

a) Fire protection?	____	____	____	X
b) Police protection?	____	____	____	X
c) Schools?	____	____	____	X
d) Maintenance of public facilities, including roads?	____	____	____	X
e) Other governmental services?	____	____	____	X

XII. UTILITIES AND SERVICE SYSTEMS. Would the proposal result in a need for new systems or supplies, or substantial alterations to the following utilities:

a) Power or natural gas?	____	____	____	X
b) Communications systems?	____	____	____	X
c) Local or regional water treatment or distribution facilities?	____	____	____	X
d) Sewer or septic tanks?	____	____	____	X
e) Storm water drainage?	____	____	____	X
f) Solid waste disposal?	____	____	____	X
g) Local or regional water supplies?	____	____	____	X

XIII. AESTHETICS. Would the proposal:

a) Affect a scenic vista or scenic highway?	____	____	____	X

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have a demonstrable negative aesthetic effect?	____	____	____	X
c) Create light or glare?	____	____	____	X

XIV. CULTURAL RESOURCES. Would the proposal:

a) disturb paleontological resources?	____	____	____	X
b) Disturb archaeological resources?	____	____	____	X
c) Affect historical resources?	____	____	____	X
d) Have the potential to cause a physical change which would affect unique ethnic cultural values?	____	____	____	X
e) Restrict existing religious or sacred uses within the potential impact area?	____	____	____	X

XV. RECREATION. Would the proposal:

a) Increase the demand for neighborhood or regional parks or other recreational facilities?	____	____	____	X
b) Affect existing recreational opportunities?	____	____	____	X

XVI. MANDATORY FINDINGS OF SIGNIFICANCE.

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	____	____	____	X
b) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	____	____	____	X
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	____	____	____	X

d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? ____ ____ ____ __X

Discussion of Environmental Factors

IVf. The first pilot study area consists of injecting a total of 125 gallons of aqueous calcium polysulfide per injection point followed by 100 gallons of clean water to disperse the calcium polysulfide. The second pilot study area consists of injecting 125 gallons of agricultural grade molasses at each injection point, followed by 100 gallons of clean water to disperse the molasses. The injection of a total of 225 gallons per injection point in each study area may temporarily raise the depth to groundwater in this area. Monitoring of existing groundwater wells located adjacent to the study area, and temporary groundwater monitoring wells proposed within the pilot study area will be monitored to evaluate the dispersion of the calcium polysulfide and any impacts on groundwater. Any rise in groundwater elevations will be localized and of short duration.

IVg. The injection of 3,125 gallons of calcium polysulfide and molasses, and 2,500 gallons of clean water may temporarily alter the direction or rate of flow of groundwater in the pilot study area. However, the area will be monitored through an existing and proposed groundwater monitoring well network. Any impacts on the rate of flow of groundwater will be localized and of short duration.

IVh. Groundwater in the immediate area may temporarily have a changed taste or odor. The proposed calcium polysulfide and molasses injection is consistent with the antidegradation provision of State Water Resources Control Board Resolution No. 68-16 in that the increase of calcium, sulfate, and possible taste and odor will be localized and temporary. The increase of calcium, sulfate, and possible taste and odor is located in an area where groundwater is not currently being used for domestic supply.

Vd. The injection of calcium polysulfide and molasses may result in hydrogen sulfide gas production and odors in the immediate vicinity of the pilot study area. An air-monitoring program to evaluate hydrogen sulfide gas is proposed for the pilot study area (located inside the building), outside the building and the neighborhood. A contingency plan for shutting down the pilot study will also been required in the event hydrogen sulfide gas and odors cause nuisance conditions or are present in harmful concentrations.

Xa. Increased noise may occur during drilling operations. The increased noise is considered to be of short duration. Notification of proposed work to nearby residents is provided, time of work is conducted during normal business hours (8-5), and the building doors are kept closed to reduce noise.

DETERMINATION

On the basis of the evaluation:

I find that the proposed project COULD NOT have a significant effect on the Environment. A NEGATIVE DECLARATION will be prepared. __X__

I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT BE a significant effect in this case because the mitigation measures described in this report have been incorporated into the proposed project. A NEGATIVE DECLARATION will be prepared. _____

I find that the proposed project MAY have a significant effect(s) on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a ”potentially significant impact” or “potentially significant unless mitigated.” Additionally analysis is required, but it must analyze only the effects that remain to be addressed. _____

I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects 1) have been analyzed adequately in an earlier document pursuant to applicable legal standards, and 2) have been avoided or mitigated pursuant to that document, including revisions or mitigation measures that are imposed upon the proposed project. _____

I find that the proposed project may have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT IS REQUIRED. _____

_____ _____

Lee A Michlin
Executive Officer

Date